



>>Entry Name: Aluminium sulfide (Al_2S_3)

CAS Registry Number: 1302-81-4

Al_2S_3

Molecular Formula: Al_2S_3

Molecular Weight: 150.161

Accurate Mass: 149.879288

Percentage Composition: Al 35.94%; S 64.06%

Use/Importance: Commercially available

Physical Description: Moisture-sensitive white cryst. (melt)

Melting Point: Mp 1100° (1240°)

Other Data: E_g 4.1 eV (300K); ΔH_f° -726 kJ mol⁻¹

Aldrich: 33318-2

>>Derivative: Bis- Me_3N complex

Molecular Formula: $\text{C}_6\text{H}_{18}\text{Al}_2\text{N}_2\text{S}_3$

Molecular Weight: 268.383

Accurate Mass: 268.026286

Percentage Composition: C 26.85%; H 6.76%; Al 20.11%; N 10.44%; S 35.84%

Source/Synthesis: Synth. from $\text{Me}_3\text{N} \cdot \text{AlH}_3$ + $(\text{Me}_3\text{Si})_2\text{S}$ in toluene at 110-115°

Physical Description: Clear blocks

Other Data: Mp >315°; attempted subl. at low pressure and *ca.* 250° → NMe_3 + amorph. Al_2S_3 . Dimeric in solid, with an adamantyl Al_4S_6 framework

>>Variant: Monoclinic-form

Synonym(s): α -form

Molecular Formula: Al_2S_3

Molecular Weight: 150.161

Accurate Mass: 149.879288

Percentage Composition: Al 35.94%; S 64.06%

Source/Synthesis: Synth. from the elements at 700-1000°

Physical Description: Moisture-sensitive colourless cryst.